

PATENT ABSTRACTS OF JAPAN

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(71)Applicant : MITSUBISHI PAPER MILLS LTD

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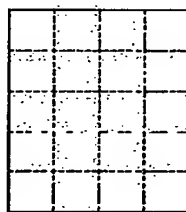
(54) IMAGE DISPLAY METHOD FOR HOME PAGE AND IMAGE AREA DESIGNATING METHOD

(57)Abstract:

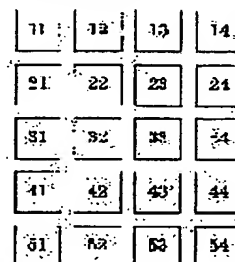
PROBLEM TO BE SOLVED: To provide an image display method for home page and an image area designating method capable of displaying an optional part with an image of high image quality by first displaying the whole image when displaying the image by scanning a printed matter such as a catalogue in a home page.

SOLUTION: This image display method for home page and this image area designating method display an image in high quality by using divided partial images corresponding to the optional part designated by a user by holding an original image by previously dividing the original image into the partial images having the continuous optional size.

①原画像



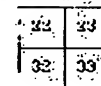
②部分画像 (9:16 上)



③縮小画像 (指定された領域 (指定上))



④部分画像を引いた原画像 (指定された領域 (指定上))



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- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
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CLAIMS

[Claim(s)]

[Claim 1] In a method of displaying a picture by a homepage of the Internet, An image display method of a homepage containing a process which displays a reduction image of an original image on a process and; homepage which divide and hold an original image to a part image of continuous arbitrary sizes beforehand, and makes a user specify a viewing area, and process [of displaying an original image corresponding to; viewing area using a part image];.

[Claim 2] An image display method of the homepage according to claim 1, wherein a process of displaying an original image corresponding to a viewing area using a part image is process; which creates dynamically a homepage which displays a part image by the terminal side.

[Claim 3] An image display method of the homepage according to claim 1 being process; displayed after a process of displaying an original image corresponding to a viewing area using a part image reconstructs a corresponding part image in one graphics file collectively.

[Claim 4] In a method of displaying a picture by a homepage of the Internet, A process of carrying out arbitrary image processing and holding a process of dividing and holding an original image to a part image of continuous arbitrary sizes beforehand, and; part images of each; an image display method of a homepage containing process; which displays an original image corresponding to arbitrary fields using a part image.

[Claim 5] An image display method of the homepage according to claim 4, wherein image processing is change of a rate of graphical data compression, change of resolution, or change of a gradation number at least.

[Claim 6] In a method of displaying a picture on a homepage and making a user specifying arbitrary imaging ranges, An imaging range specification method of a homepage characterized by a thing of a picture of a displayed picture displayed as one of the upper and lower sides at least which you arrange a button side by side to either right or left at least, and is made to specify a field in ON of this button, and OFF.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the method of presentation of the picture which used the homepage. By expressing the required portion of a picture as required image quality, it is related with the image display method of the homepage which decreases traffic. It is related with the imaging range specification method of the homepage which makes a user specify arbitrary imaging ranges.

[0002]

[Description of the Prior Art] The Internet spreads and many information is disseminated by a homepage. The value is increasing by especially a picture being seen.

[0003] A homepage means what is sent with the WWW (World Wide Web) server of the Internet, and is generally displayed by a browser. WWW servers are Apache, Internet Information Server of Microsoft Corp., etc. Browsers are NetscapeNavigator of for example, Netscape, InternetExplorer of Microsoft Corp., etc. The homepage is described by html (hypertext markup language) etc.

[0004] Although it is common for it to be sent with a WWW server via the Internet, and to be displayed by a browser as for a homepage, if there are media in which

the data of the homepage was stored, a homepage can be displayed even if it does not access the Internet. Here, it is called a homepage including the case where such the Internet is not passed. How to send data via a homepage and play an animation and music is also known, and these are also put in block as a homepage and are described here.

[0005]When seeing a homepage by a browser, there is restriction of the device to be used and the size of the screen which can be displayed at once is specified. That picture must be made below into the size which can be displayed on a screen, if you would like to see the whole picture at once in seeing a picture in this screen. Thus, in order to show the whole, the method of displaying the picture which reduced the original picture is known. A reduction image may be called a thumbnail.

[0006]Although the whole picture is looked at by the thumbnail etc., in such a display, the details of a picture are not known well. When it displays small, it becomes impossible to read a small character in particular in the picture which read printed matter like a catalog with the scanner. An important picture also has that a character can be read [much].

[0007]On the other hand, since it is [whole / a part of] visible on a browser if the picture of high resolution is displayed, it will move in the field seen vertically and horizontally, the target position will be seen, and it is troublesome.

[0008]Since the picture of such high resolution has large data volume, when transmitting data by communication like the Internet, there is a problem to which waiting time until it is displayed is long, communication cost becomes high, or traffic becomes large.

[0009]For this reason, the image display method of the Internet which displays a low resolution or the reduced picture on the homepage of the Internet, and displays the picture of high resolution with a user's directions from the former is used.

[0010]For example, the thumbnail is displayed and the method of displaying the picture of high resolution by clicking this is used widely.

[0011]

[Problem(s) to be Solved by the Invention]If a picture is large at high resolution, details are seen and a small character can also be read. However, if a picture is large at high resolution, traffic will become large and the problem which requires time and effort for seeing a place to see after a display will arise.

[0012]The purpose of this invention is to provide the image display method of the homepage on which the picture of high resolution is displayed by the image quality which needs only a required portion.

[0013]Furthermore, the purpose of this invention is to make data volume of a picture small and to lessen traffic of the Internet. The image display method of the homepage which shortens the waiting time to a user's image display is provided.

[0014]The imaging range specification method of the homepage as which a user can be made to choose arbitrary required fields is provided.

[0015]

[Means for Solving the Problem]In a method of displaying a picture by a homepage of the Internet according to this invention, Divide and hold an original image to a part image of continuous arbitrary sizes beforehand, and display a reduction image of an original image on a homepage, a user is made to specify a viewing area, and an image display method of a homepage which displays an original image corresponding to a viewing area using a part image is provided.

[0016]According to this invention, an image display method of the above-mentioned homepage, wherein a method of displaying an original image corresponding to a viewing area using a part image is the method of creating dynamically a homepage which displays a part image by the terminal side is provided.

[0017]According to this invention, an image display method of the above-mentioned homepage being the method of displaying after a method of displaying an original image corresponding to a viewing area using a part image reconstructs a corresponding part image in one graphics file collectively is provided.

[0018]In a method of furthermore displaying a picture by a homepage of the Internet according to this invention, An original image is beforehand divided and held to a part image of continuous arbitrary sizes, arbitrary image processing is carried out, the part images of each are held, and an image display method of a homepage which displays an original image corresponding to arbitrary fields using a part image is provided.

[0019]According to this invention, an image display method of the above-mentioned homepage, wherein image processing is change of a rate of graphical data compression, change of resolution, or change of a gradation number at least is provided.

[0020]In a method of according to this invention displaying a picture on a homepage and making a user specifying arbitrary imaging ranges furthermore, An imaging range specification method of a homepage by which it is characterized is provided in a thing of a picture of a displayed picture displayed as one of the upper and lower sides at least which you arrange a button side by side to either right or left at least, and is made to specify a field in ON of this button, and OFF.

[0021]

[Embodiment of the Invention]An embodiment of the invention is described using a drawing. The image display method of the homepage of this invention comprises the terminal 4 which displays a homepage via the server 3 and the Internet 2 holding the data of a homepage, especially image data. Composition is shown in drawing 1. Although the terminal 4 is not shown in a figure, it has a gestalt which two or more exist and accesses the server 3 simultaneously.

[0022]The server 3 and the terminal 4 are computer systems, and show drawing 2 the block diagram showing the composition of these computer systems 1. The control means 11 which consists of a CPU or a memory performs each input/output control, data transfer, an operation, etc. The displaying means 12 and the input means 13 of a mouse, a touch screen, a keyboard, etc., etc. which consist of CRT or LCD are connected to the control means 11. The memory measure 14 is connected to the control means 11. The Internet input output means 15 is connected to the control means 11. A program and data are memorized by the memory measure 14 and it is used by the control means 11.

[0023]A user looks at the picture which the server 3 holds using the displaying means and browser of the terminal 4.

[0024]The process of this embodiment is explained using a flow chart. The process of dividing and holding an original image to the part image of the arbitrary sizes which continued beforehand to the flow chart of drawing 3. The process which displays the reduction image of an original image on a homepage, and makes a user specify a part of picture, and the process of displaying the original image corresponding to the specified portion using the divided part image are shown in the flow chart of drawing 4.

[0025]The process of dividing and holding an original image to the part image of the arbitrary sizes which continued beforehand can be carried out like the flow chart of drawing 3. This is a preliminary process performed a priori in a server. In Step 1-1, the original image which became digital data by scanning a catalog and a photograph, for example is obtained. The picture which is digital data from the first can also be used like computer graphics. It can use similarly by image-data-izing a character and vector data. The reduction image is also created simultaneously. A reduction image is a picture which made size small so that the whole picture might be seen at a time at a common terminal.

[0026]Original image data is divided into the part image of arbitrary sizes in Step 1-2. The image data treated here is two-dimensional array in arrangement. Here, X is expressed for a horizontal axis and the element of Y and a picture is

expressed for a vertical axis as a pixel. For example, an original image will presuppose that they were 800 pixels wide and a 1000-pixel-long color picture, and will express this as 800x1000. If this original image is divided into the part image in which 200x200 continued, an original image will be five lines in the direction of Y, and will become in the direction of X with the meeting of the part image of four row **. A mimetic diagram is shown in drawing 5.

[0027]Although the size and form of a part image are arbitrary, it is easy to treat a rectangle and a square. As for a part image, it is desirable to divide so that it may not have the field which was followed and with which each part images lapped.

[0028]All of the size and form of the part image to one original image can take the same method. This tends to process division automatically and can also simplify treatment of a partial image file. As shown later, when displaying a picture, using this part image two or more, there is the feature to which processing becomes easy.

[0029]On the other hand, the size and form of the part image to one original image can also be respectively changed according to the purpose.

[0030]Step 1-3 is carried out if needed. In this step, arbitrary image processing is respectively performed to the divided part image. For example, there are change of resolution, change of graphical data compression, and change of a gradation number as image processing. Image processing which changes a color picture into a monochrome image is also included in this. It is the purpose that change the image quality of each portion according to the purpose to display an original image on, and this lowers the data volume of a picture. For example, supposing a certain catalog is constituted from some photographs and some characters by the white ground, although black and white may be sufficient as a character among the divided part images, and a low resolution and a photograph are colors, the resolution which is a degree in the middle is sufficient as high resolution and a white ground. When holding this by files which can carry out graphical data compression, such as JPEG, it can respond by changing the compression ratio of each part image. That is, a character performs low compression, a white ground performs high compression, and a photograph performs inside compression, for example.

[0031]If image processing is performed to the whole original image by the conventional method, it cannot respond to the purpose for every element within a picture. Then, reduction of efficient data volume was enabled by performing image processing for every part image.

[0032]In Step 1-4, the divided part image is respectively held as a file at a server.

[0033]A user describes an embodiment of the invention from the side which displays a picture on a terminal. The process which displays the reduction image of an original image on a homepage, and makes a user specify a part of picture, and the process of displaying the picture corresponding to the specified portion using the divided part image are shown in the flow chart of drawing 4.

[0034]The reduction image of an original image is read from a server, and is expressed as Step 2-1. The reduction image of the original image is beforehand created by the method generally performed.

[0035]A reduction image is shown to a user and he is made to specify a part of picture in Step 2-2. Three examples are shown below as a method of making a part of picture specifying.

[0036]The range is specified on the reduction image displayed on the terminal using method 1:, for example, the mouse, which make a part of picture specify. A mouse is specifically clicked and dragged on one square of a rectangle region to expand to, and a mouse button is detached by a vertical angle. This is the method of territorial extension generally used by the software of a personal computer. There is also the method of clicking two vertical angles of a rectangle region to expand simply in order.

[0037]The method 2 of making a part of picture specify: On the reduction image displayed on the terminal, the typical enlargement range is shown and specify this with a mouse etc. If it is a picture of a catalog, specifically, the rectangular head of range specification will be expressed as the line on the reduction image for every field of a text, or field of an explanatory view. This square itself uses the button of the homepage, and when this rectangular head is clicked, the original image of this field is displayed.

[0038]the reduction image displayed on the method 3:terminal which makes a part of picture specify -- the upper (or -- lower) -- the right (or -- the left) -- the divided button of the width of each procession is arranged and a field is made to specify in ON of this button, and OFF It is desirable for a designated range to be able to check on a reduction image. A mimetic diagram is shown in drawing 6. In the case where there is much number of partitions, if two buttons are ON, the button in the meantime can also take the method of setting to ON. This method has simple work of a homepage compared with the two above-mentioned methods, and there is the feature intuitive also for a user and intelligible.

[0039]In Step 2-3, a partial image file corresponding from the area information of the specified picture is chosen. When area information has not become per partial image file, this is processed, and a corresponding partial image file is chosen.

[0040]In a terminal, the appointed field of an original image is expressed as Step 2-4 using the selected partial image file. Although various methods are possible, three are shown below as an example of a concrete method.

[0041]The method of creating dynamically the homepage which displays the appointed field of an original image by the server side as the 1st method can be taken. This is because the part image group used in order to reproduce this since the designated range of an original image is arbitrarily chosen by the user is not immobilization. A part image is a file and is identified by the file name. A homepage opts for the partial image file name read from a server, and its arrangement each time, and creates a homepage by the server side. Thus, it writes as dynamic here not the homepage currently made a priori but creating a homepage each time. Dynamic processing by the side of a server can be carried out by CGI (common gateway interface) and a program (it makes by Perl, the C language, etc.). In this case, Step 2-5 displays the homepage for a display with operation of Step 2-4.

[0042]The method of creating dynamically the homepage which displays the appointed field of an original image by the terminal side as the 2nd method can be taken. Dynamic processing by the side of a terminal can be performed by JAVA (registered trademark) etc. The display homepage created at Step 2-4 is expressed as Step 2-5. Thereby, a terminal displays the original image of the specified field by receiving a required part image from a server by communication, and arranging this. This method has an effect which does not apply load to a server.

[0043]The method of displaying as the 3rd method, after reconstructing in one graphics file can be taken. This connects the first selected partial image file group, and makes it one graphics file. The maintenance place and file name of this file are decided. The homepage to display is beforehand created so that this file may be read. In this case, the homepage for a display can be created beforehand. This display homepage is displayed in Step 2-5.

[0044]When performing image processing to each part image at Step 1-3, it is also possible to prepare several kinds of partial image files by the difference in image processing. In this case, the method of choosing the difference among these image processing at Step 2-2 can be performed. For example, the selection "image quality serious consideration" "early displayed since black and white may be sufficient" is enabled at the kind of the designated range expansion method.

[0045]The overall mimetic diagram of the image display method of the homepage of this invention is shown in drawing 5. The example of a screen display of a

terminal is shown in drawing 7. The image display method of the homepage of this invention is used, when scanning printed matter like a catalog, for example and displaying by a homepage.

[0046]Although the image display method of the homepage of this invention is enforced by WWW of the Internet, it is also possible to carry out on the media which recorded a program and data, for example, the computer system which supply with the gestalt of CD-ROM** and is generally used. The method of carrying out the electronic publishing of the catalog already owned as printed matter or the data simply becomes possible.

[0047]

[Effect of the Invention]By this invention, the high-definition display of the arbitrary appointed fields of a picture was enabled in the image display of a homepage. The data transfer quantity of the Internet is reducible because a display is possible only for a required portion. By changing the image quality of each part image according to the contents of the picture, data volume is reduced further and the data transfer quantity of the Internet can be reduced. The image display method of the homepage in which high-speed image display is possible was provided by these.

[0048]This invention is effective at especially the site that provides many such pictures. That is because work of each homepage can automate by a fixed technique.

[0049]For example, the field was chosen artificially, the file name was changed and the button was attached to the position to which the reduction image shown first corresponds to prepare some original images, for example, the field of the small text of a character, and **** as a picture of high resolution beforehand conventionally. Judgment of people is necessity each time and these work has much change for every homepage. When it is thought that a user wants to make and to indicate the place except having been crowded by high-definition, naturally it cannot respond.

[0050]On the other hand, according to the method of this invention, preparation and the method of presentation can carry out [routine]-izing. Since a user specifies arbitrarily, where he would like to display does not have the necessity for correspondence in beforehand. Once a program is made, it is easy to only specify a new original image and to make a part image systematically. The homepage of a display of a fixed form can be used. If a concrete example shows, most back is automatable only by scanning a catalog with a scanner and attaching a file name.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]The block diagram of the usage pattern in the Internet.

[Drawing 2]The block diagram of a computer system used.

[Drawing 3]The flow chart of the preliminary process in a server.

[Drawing 4]The flow chart of the image display process of a homepage [in / mainly / a terminal].

[Drawing 5]The easy mimetic diagram of this invention.

[Drawing 6]The mimetic diagram of a method which specifies the field by this invention to display.

[Drawing 7]The example of the screen of the image display of a homepage.

[Description of Notations]

1 Computer system

2 Internet

3 Server

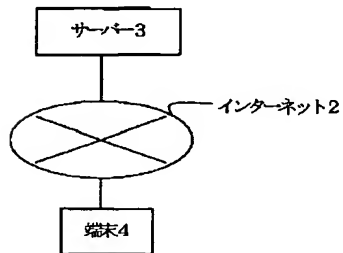
4 Terminal

11 Control means

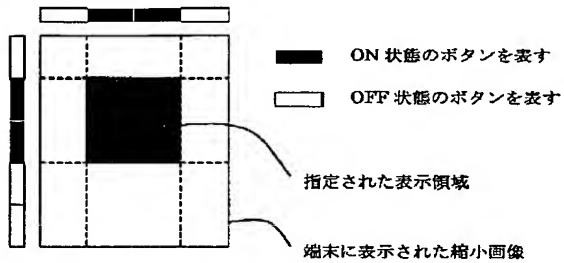
- 12 Displaying means
- 13 Input means
- 14 Memory measure
- 15 Internet input output means

DRAWINGS

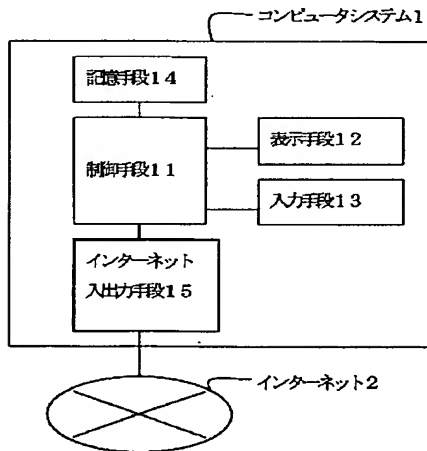
[Drawing 1]



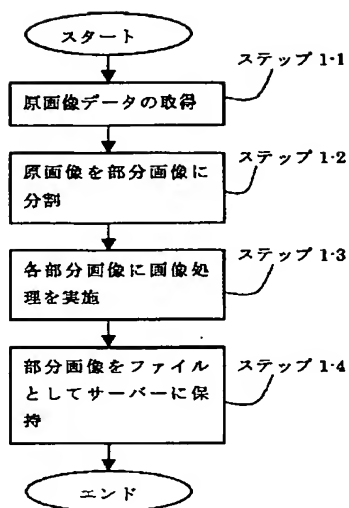
[Drawing 6]



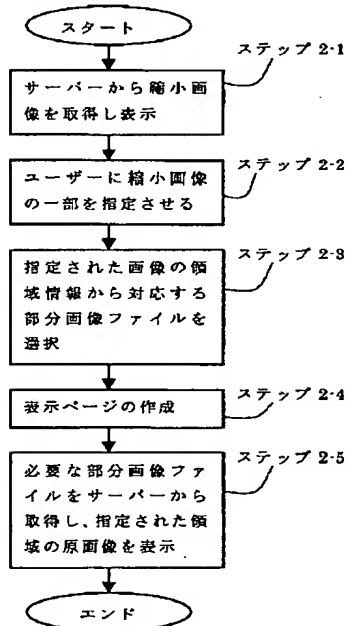
[Drawing 2]



[Drawing 3]

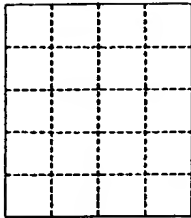


[Drawing 4]

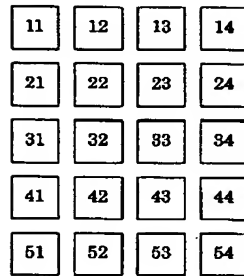
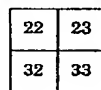


[Drawing 5]

①原画像



②部分画像 (サーバー上)

③縮小画像と指定された領域
(端末上)④部分画像を用いた原画像
指定領域の表示 (端末上)

[Drawing 7]

